

## APPARATUS FOR PROVIDING DYNAMIC EQUALIZER OPTIMIZATION

### ABSTRACT

An apparatus for providing dynamic equalizer optimization is disclosed. The  
5 present invention solves the above-described problems by providing equalizer coefficient  
updates that converge towards the same solution as the direct method without having to  
first write a known pattern to the disk or requiring any prior knowledge of the data  
already written on the disk. The adaptive cosine function may be used to modify only a  
DFIR tap set, only the j and k parameters of a cosine equalizer or to modify both the tap  
10 set for a DFIR filter and the j and k parameters of the cosine equalizer. Another  
algorithm, such as the LMS algorithm, may be used to modify parameters not modified  
by the cosine algorithm.